ثانويـة التكنولوجيـا التطبيقيـة
Applied Technology High School

SAT I **2011 / 2012**

Question booklet # 3

Grade	**11**
Cluster	**Core**
Subject	**Mathematics**

Student Name			
Student Number		**Section**	

Coverage	➢ SAT I, Angles, Angle Relationships, Side relationship, Area and perimeter, Pythagorean Theorem, Coordinate Geometry

1. Two of three angles of a triangle measure $35°$ and $65°$, respectively. What is the measure, in degrees, of the third angle of the triangle?

a. $65°$
b. $35°$
c. $80°$
d. $100°$
e. $110°$

---

2. A circle has an area of π square meters, what is the circumference of the circle?

a. π meters
b. 2π meters
c. $\sqrt{\pi}$ meters
d. π^2 meters
e. $\frac{1}{\pi}$ meters

---

3. Two of three angles of a triangle are equal. What is the measure of each one, in degrees, if the measure of the third angle is $70°$?

a. $65°$
b. $55°$
c. $45°$
d. $70°$
e. $140°$

---

4. For which of the following values of a will a right triangle with sides and angles as labeled above result in the largest value of $\frac{x}{y}$?

a. 15
b. 30
c. 45
d. 60
e. 75

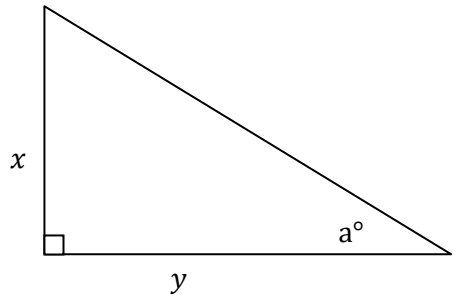
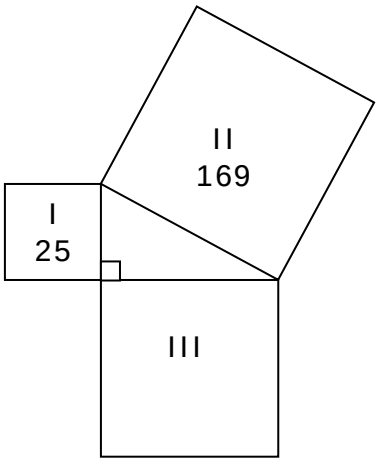
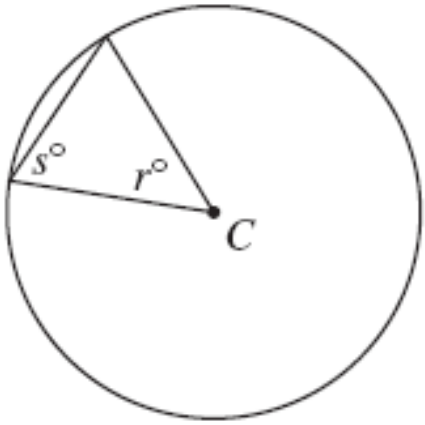


Figure not drawn to scale



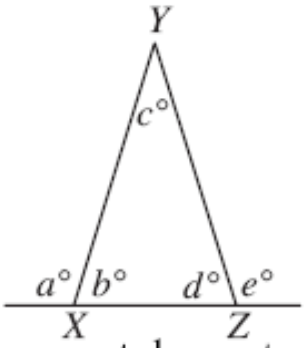
5. In the figure above, if square I has an area of 25 square units and square II has an area of 169 square units, how many square units is the area of square III?

a. 81
b. 100
c. 121
d. 144
e. 196



6. In the figure above if C is the center of the circle and $20 < r < 40$, which of the following expresses all possible values of s?

a. $30 < s < 50$
b. $50 < s < 70$
c. $70 < s < 80$
d. $75 < s < 90$
e. $140 < s < 160$



Note: Figure not drawn to scale.

7. In ΔXYZ above $XY = YZ$ which of the following must be true?

a. $a = c$
b. $a = e$
c. $a = d$
d. $b = e$
e. $c = d$

---

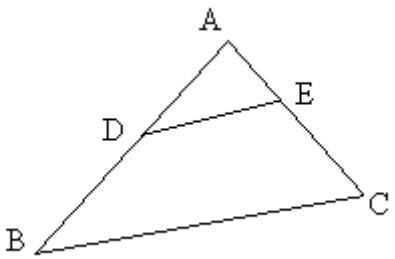
8. If the area of the triangle is 36 and its base is 9, what is the length of the altitude to that base?

a. 2
b. 4
c. 6
d. 8
e. 12

9.

In triangle ABC, AD = DB, DE is parallel to BC, and the area of triangle ABC is 40. What is the area of triangle ADE?

a. 10
b. 15
c. 20
d. 30
e. cannot be determined from the information given



---

10. If the slope of a line is ½ and the y-intercept is 3, what is the x-intercept of the same line?

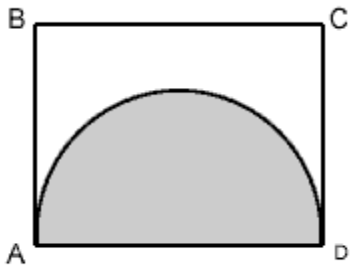
a. 6

b. $\frac{3}{2}$

c. 0

d. $-\frac{2}{3}$

e. 6



(figure not to scale)

11.

Rectangle ABCD has a perimeter of 26. The half circle with diameter AD has an area of 8π. What is the perimeter of the part of the figure that is not shaded?

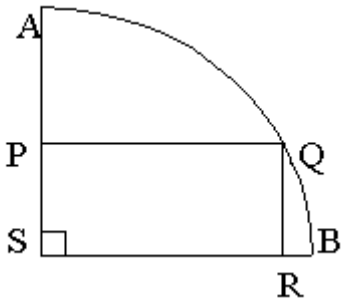
a. $26 + 4\pi$

b. $18 + 8\pi$

c. $18 + 4\pi$

d. $14 + 4\pi$

e. $14 + 2\pi$



12.

ASB is a quarter circles. PQRS is a rectangle with sides PQ = 8 and PS = 6. What is the length of the arc AQB?

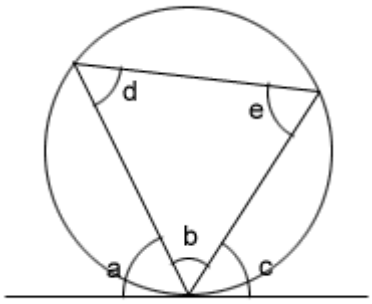
a. 5π

b. 10π

c. 25

d. 14

e. 28



13.

Which of the following pairs of angles must be equal?

a. a and e only

b. a and e, and c and d only

c. c and d only

d. d and e only

e. c and d and a and e only

---

14. What is the slope of $3x + 4y = 24$?

a. $-\frac{3}{4}$

b. 6

c. $\frac{3}{4}$

d. -8

e. -4

---

15. A line segment containing the points (0, 0) and (12, 6) also contains:

a. (6,4)

b. (2,4)

c. (8, 4)

d. (1,0)

e. (2,0)

---

16. . If a cube has a volume of 64, the perimeter of one face of the cube is:

a. 8

b. 32

c. 4

d. 16

e. 12

---

17. If the area of a triangle is 24 and its base is 6 what is the length of the altitude to the base?

a. 3

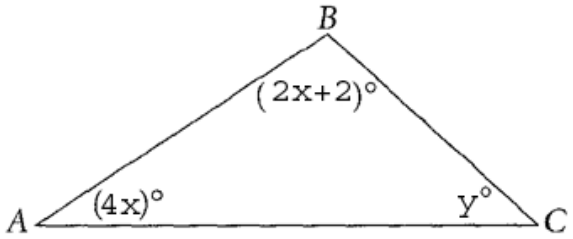
b. 6

c. 10

d. 8

e. unknown

18.



In the triangle above if the measure of angle b is 52 degrees then what is the value of *y*?

a. 20

b. 22

c. 24

d. 28

e. 30

End of practice booklet 3